




**Lake Sinissippi Improvement District
112 S. Lake Street
PO Box 89
Hustisford, Wisconsin 53034**

REQUEST FOR PROPOSAL.2 (WITH PRICING FOR PROFESSIONAL SERVICES)

November 13, 2012

**COMPREHENSIVE ENGINEERING PLAN FOR
ROCK RIVER CHANNEL WATERWAY IMPROVEMENT PROJECT:**

-  Environmental Restorations and Enhancements
 -  Stabilization of Existing Shoreline
 -  River Channel Restoration for Navigation

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- + Environmental Restorations and Enhancements
 - + Stabilization of Existing Shoreline
 - + River Channel Restoration for Navigation

SUBMISSION DETAILS

Submission Date:

By December 31, 2012

Email Address for Submission of Proposal.2 (With Pricing for Professional Services) in PDF Format:

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PROJECT BACKGROUND

Lake Sinissippi is a 3,000-acre shallow impoundment of the Rock River in Dodge County. Average water depth is 4 feet; maximum depth is 8 feet at the Hustisford Dam. Eroded sediment from the Horicon Marsh enters the Rock River several miles upstream of the lake adding silt, high BOD organic matter and nutrients to the water flow. Shoreline erosion and degraded wetland fringe contribute sediment to the waterway. Water quality is classified as eutrophic. The lake and river are on the federal EPA 303(d) list of impaired waters due to excessive sedimentation and nutrient enrichment from high levels of phosphorus.

The lake and river area is within the Southeast Glacial Plain ecological landscape. Five natural communities are represented in the area: two aquatic communities (impoundment and warmwater river) and three wetland communities (emergent marsh, shrub carr and sedge meadow). The waterway is also designated in the Natural Heritage Inventory due to the occurrence of rare animal and plant species. The lake and river are part of the Horicon Marsh staging area for migratory waterfowl and other birds migrating along the Mississippi Flyway.

The fishery of Lake Sinissippi is dominated by rough fish, such as carp and bullhead, and contains minimal gamefish and panfish populations.

Actions of the large carp population stir up bottom sediments, resulting in poor water clarity and uprooting of aquatic vegetation. The turbidity caused by carp and boat traffic and suspended sediment in the Rock River minimize light penetration through the water column, reducing the photic zone and inhibiting establishment and growth of submersed plants.

Information gathered from an earlier survey indicates the lake has low species diversity and biomass of aquatic plants; aquatic macrophytes were found at only 11 of the 104 sampling locations. Three species of vascular plants commonly found included cattail, water shield and yellow water lily. Wetland plant species in the shoreline area of lake and river include dogwood and black willow, typical plants of the shrub carr wetland community

River shoreline and associated wetland habitat have experienced significant loss over the years. Emergent marsh has contracted due to high water levels, erosive effects of wave energy from wind and powerboats and degrading action of carp on rooted aquatic vegetation. Much of the left descending bank of the river channel downstream of the CTH S Bridge has been lost due to erosion, along with loss of small islands and emergent marsh northeast of the lower river channel. Remaining shoreline vegetative fringe is primarily monoculture stands of cattail, with isolated areas of water lily.

Loss of wetland habitat has contributed to a reduction in the number and diversity of waterfowl. Important bird species that once frequented the marsh and wetland areas of the lake and river such as American bittern, American black duck, snowy egret and redhead are now generally absent from the waterway.

The boundaries of Lake Sinissippi Improvement District (the "LSID") extend from the CTH S Bridge to the Hustisford Dam and include the river channel and main body of the lake and all riparian lands of the waterway.

The volume of the river channel and lake basin is estimated at 30 million cubic yards (3,000 acres x 6.3 feet average depth to hard bottom x 1,600 yd³/foot-acre). The volume of the sediment layer in the river channel and lake basin is about 11 million cubic yards, representing 37 % of total channel-lake volume. Thus, over one-third of the waterway is filled with sediment. Some deep holes in the river channel are 15 feet to hard bottom, but are filled with 13-14 feet of sediment. Navigation within the river channel and recreational boating in many areas of the lake are adversely affected by excessive sediment deposition.

The board of commissioners of LSID conducted four sediment dredging projects during 2005-2010. In the aggregate these dredging projects removed 10,000 cubic yards of sediment from the lake and tributaries and returned the sediment to the land or re-used it beneficially for wetland restoration.

In 2001 the first slow-no-wake, habitat protection zone was established in an embayment on the west side of the lake. This zone is habitat for a nesting pair of bald eagles, a heron rookery, white pelican and an area of emergent marsh primarily composed of water lily, a floating-leafed macrophyte. Four additional habitat protection zones were established in 2003-2005.

Working under a 2004 WDNR lake planning grant, LSID identified 13 areas of the lake and river that could be used for potential restoration of emergent marsh and wetland habitat. Five of these areas are located within the Rock River channel between CTH S Bridge and Club Grounds Road. Restoration efforts that encourage development of wetland habitat on the lake and river benefit the greater Horicon Marsh bird migration area.

In spring 2006 LSID completed a wetland restoration project using Geotube[®] geotextile fabric containment tubes. A 24-acre embayment, which formerly was luxuriant wetland that served as abundant forage habitat for waterfowl, was contained by an offshore breakwater using 760 feet of geotextile tubing filled with hydraulically-pumped lake sediment. Additional sediment was pumped behind the tube to provide substrate for vegetative plantings. A gravel outlet culvert with mesh screening was constructed at one end of the tube to allow for water flow and to restrict passage of carp from the lake into the bay. Fisheries biologists from WDNR-Horicon used rotenone to eradicate carp within the embayment to allow the native seed bank in the sediment to germinate and grow without disturbance. In addition, six thousand plants were planted within about 5 acres of the embayment behind the Geotube. Aquatic vegetation used for the plantings included varieties of pond weed, white water lily, hard and soft stem bulrush, pickerel weed and blue flag. Results thus far have been only minimally successful due to herbivory pressure from Canada geese and periods of flood that allowed carp to pass over the tube into the embayment.

Over the past three years LSID conducted three shoreline stabilization projects for erosion control and enhancement of wildlife habitat with grant funding by the County Conservation Aids Program.

Lake Sinissippi Association (the "LSA") has led local efforts over the past five years to encourage commercial fishermen to remove carp from the lake and river by netting. Netting large quantities of carp on an annual basis is an effective, yet benign, method of controlling the population of rough fish; however, state regulatory concerns with licensed fishermen have halted commercial fishing at this time. Most years LSA and LSID stock gamefish such as walleye, northern, perch and crappie under WDNR permit.

In 2007 LSID partnered with the US Army Corps of Engineers, Rock Island District (the "Corps"), to obtain planning guidance to address waterway problems of excessive sedimentation, impediments to navigation, shoreline erosion and loss of wetlands, islands and aquatic plant habitat in the lake and Rock River channel.

A report was issued by the Corps in 2009 entitled *Alternatives Report, Lake Sinissippi Improvement District, Dodge County, Wisconsin*, under the Planning Assistance to States, Section 22 Program. The report was presented to the lake community by LSID and Corps at a public informational meeting held in Hustisford, Wis., on November 12, 2009.

The Corps report does not identify any one particular solution to the waterway problems, but rather identifies multiple approaches. Some of the approaches can potentially address several problems at once, such as removing sediment from a navigation channel and beneficially using the sediment to recreate wetlands, islands and wildlife habitat. Additionally, removing sediment from the river channel may restore deep-water fish habitat.

In 2010 LSID began investigating options for large-scale sediment dredging to increase water depth in navigation channels, combined with erosion protection of shoreline and environmental restorations and enhancements. A memorandum entitled *Comparative Cost Analyses and Considerations of Sediment Dredging* was prepared by the LSID board to assist in the investigation process.

The 2011 annual meeting of LSID electors approved the first steps toward developing a comprehensive engineering plan for large-scale sediment removal. A questionnaire was mailed to lake residents and property owners to solicit experiences with and perceptions of the sedimentation problem, recommendations of potential solutions and the degree of community support for sediment removal projects. The survey return rate was almost 46 %, an unusually high rate for a community survey. The results indicated strong acknowledgement of the negative impact of excessive sedimentation on lake condition, recreational use and property values. Seventy-eight percent of those who responded believed that sediment removal should be one of LSID's primary responsibilities.

In subsequent months focus groups and interviews were held with lake residents, along with informational mailings, to obtain constructive input to the decision-making process. There was general consensus that a major effort should be made on a multi-year basis to protect existing shorelines, dredge sediment to improve navigation channels and use the material for environmental restoration and enhancement projects. The priority area was identified as the Rock River channel between the CTH S Bridge and Club Grounds Road.

The Rock River channel is also identified in the Corps report as a priority site for sediment removal, shoreline stabilization and environmental enhancements. The report presents four options for addressing excessive sedimentation and habitat restoration and enhancement in the Rock River channel.

At the 2012 annual meeting LSID electors approved a 2013 budget that includes establishment of a dedicated fund for a multi-year waterway improvement project for the Rock River channel. The LSID board decided to engage professional services to assist with the conceptual design, engineering and construction of the restoration project.

PROJECT LOCATION AND SITE PLAN

The location of the project area is the Rock River channel in sections 19 and 30 of the Town of Hubbard and sections 13, 24 and 25 of the Town of Oak Grove, Dodge County, Wisconsin. A site plan is shown in Figure 1. The project area extends along the Rock River from CTH S Bridge downstream to a point near the end of Lehman's Cottages, east to the southern end of Sinissippi Lakeview Subdivision and north along a small waterway to the road culvert under CTH S.

SUMMARY OF REQUEST FOR PROPOSAL.2

LSID recently sent to a number of consulting engineers (each a "Consultant") a request for proposal to help design and implement sustainable solutions to water resource problems in the Rock River channel. The Consultants were requested to submit ideas of the major items necessary for developing a comprehensive engineering plan to address three key elements:

- Environmental Restorations and Enhancements (Wetlands, Islands and Wildlife Habitat)
- Stabilization of Shoreline Experiencing Substantial Erosion
- River Channel Restoration for Navigation

LSID reviewed the Consultants' initial proposals and discussed the project with the Project Management Branch, US Army Corps of Engineers, Rock Island District. Based on this information LSID prepared specifications for the five stages of the project including qualitative and quantitative measures and requirements the board believes are important. A project task critical path network was prepared and is given in Figure 2 and Table 1.

LSID is now requesting from Consultants a Proposal.2 with pricing for professional services to address tasks in Stage 1 sections A, B and C of the project.

Proposal.2 with pricing for professional services is due no later than December 31, 2012.

Assuming proposals received by the submission date are complete, the LSID board expects to select a proposal for funding no later than January 15, 2013, so project work can begin that month.

DETAILED SPECIFICATIONS

STAGE 1 EVALUATION, ENVIRONMENTAL ASSESSMENT AND CONCEPTUAL DESIGN

A. Data acquisition

Consultant Tasks:

1. Additional bathymetric data of water depth, depth to hard bottom and thickness of sediment layer to supplement data developed by LSID in 2004. A minimum of five transects should be surveyed across the river and culvert channel to provide data for hydraulic modeling (point 4 below).
2. Elevation data of land forms and lake bottom sites within the project area referenced to benchmarks at the spillway crest of the Hustisford Dam and CTH S Bridge. These data will be used to establish final elevations of any proposed breakwater structure in the project area and fill levels for wetland restoration.
3. Analyses of additional sediment samples to obtain quantitative and qualitative data of sediment composition to supplement data reported by USACE in 2003. Data will be used to evaluate suitability of sediment as substrate for wetland restoration and as fill material for geotextile fabric containment breakwaters. Data will also be needed for permit applications for dredging.

4. Hydraulic modeling (HEC-RAS) data of stream flow characteristics and sediment transport, and calculation of regional flood storage capacities. A minimum of two models will be developed, the first representing current conditions and a second model based on new conditions of the restoration option(s). A determination will be made of the effect of partial diversion of river flow through the culvert on CTH S.
5. Dimensions and physical characteristics of eroding shoreline for use in designing and permitting erosion control measures and bank stabilization.
6. Other data considered by the Consultant to be necessary for a rigorous evaluation of current conditions and restoration options.

LSID Tasks:

1. LSID to begin Environmental Assessment (EA) (need, purpose, project environment)
2. Composition of the aquatic plant community and areal expanse of existing wetland vegetative fringe.
3. Changes in geomorphology from archival records of river channel configuration and wetland areal coverage.
4. Real estate records of riparian ownership within the project area and consideration of the potential impact of the waterway project to lake access and recreational use by residents of Horseshoe Road and Sinissippi Lakeview Subdivision.
5. Land use and ownership of potentially newly-created land.
6. Historical and archeological survey.
7. Threatened and endangered species survey.
8. Land values and acquisition availability.
9. Possible easement requirements and values.
10. Simple environmental benefits-to-cost comparison

B. Evaluation of restoration options and environmental impacts

Consultant will evaluate options 1-4 given in the Corps report, alternative options and configurations, design concepts and methodologies to achieve sustainable solutions to the problems of shoreline recession and loss, excessive sedimentation within the river channel and environmental restorations and enhancements, and assess environmental impacts of potential solutions.

C. Recommendations for restoration and 35 % conceptual design in draft

Recommendations and conceptual design draft(s) of up to three restoration options will be prepared by Consultant. The conceptual design of each restoration option will provide sufficient detail for each of the three project elements:

- Environmental Restorations and Enhancements (environmentally sensitive dredging operation and beneficial use of sediment for wetland restoration, restoration of lost islands, restoration of emergent marsh and wildlife habitat and restoring suitable habitat to support gamefish reproduction in the large shallow area northeast of Lehman's Cottages.)
- Stabilization of Existing Shoreline (locations and dimensions of eroding shoreline from CTH S Bridge to near Lehman's Cottages and methods of stabilization)
- River Channel Restoration for Navigation (estimated dredging quantities, sediment placement sites, cross-sectional profile of dredged navigation channel, method(s) of restoring channel geometry, configuration of offshore breakwaters for rechannelization and deep-water holes for fish habitat from the peninsula at the end of the Upper Rock River Channel to a point east of Lehman's Cottages)

Consideration should be given to maintenance requirements for erosion protection measures on shorelines, constructed offshore breakwaters and islands and for wetland restorations. Consideration should also be given to

sustainable designs that may be necessary due to potential impacts of climate change (increased frequency of floods, extremes of flood-to-drought cycles, etc) and land use change on river flow, sediment regimes and lake conditions.

Deliverables: One, two or three restoration recommendations with conceptual designs (35 % completion) in technical report form with sufficient detail and attachments including information generated under data acquisition will be provided to the LSID board. The technical report will allow the board to select the most cost-effective solution(s) based on project scope, technical content, anticipated implementation time and preliminary cost estimates. The restoration option(s) selected by LSID will proceed to review with state and federal agencies.

Anticipated Completion Date: By August 31, 2013

STAGE 1.2 REVIEW TECHNICAL REPORT WITH RESTORATION OPTION(S) AND CONCEPTUAL DESIGN AND EA WITH STATE AND FEDERAL AGENCIES.

LSID and Consultant will review with state and federal agencies the technical report with restoration option(s) and conceptual design and the partial EA.

Deliverables: Agency review and comments on restoration options and partial EA draft that provide concurrence to move project forward as presented or offer guidelines for revision of option(s) and adaptations to conceptual design.

Anticipated Completion Date: By October 31, 2013

STAGE 2 DECISION POINTS, PUBLIC INFORMATION AND OUTREACH, FUNDING AND FISCAL MANAGEMENT

A. Decision point for LSID board.

B. Public information and outreach

LSID and LSA will be responsible for administering the public information and outreach phase. The Consultant may be requested by LSID to provide assistance during this phase.

Deliverables: Use of public information meetings, mailings and local media to communicate to LSID electors and the lake community on project activities and progress, thereby maintaining community support for the project.

Anticipated Completion Date: In process and on-going

C. Funding and fiscal management

LSID and LSA will be responsible for administering the funding and fiscal management phase. The Consultant may be requested by LSID to provide assistance to identify grant opportunities and secure funding during this phase. The Consultant may also be requested to provide assistance on funding implementation and fiscal management.

Deliverables: Sufficient funding and appropriate fiscal management to pay for the project as it is designed and constructed and within the timeline for implementation.

Anticipated Completion Date: In process and on-going

D. Decision point for LSID board to proceed with recommendation and finish EA.

Anticipated Completion Date: TBD

STAGE 3 PERMITTING PHASE

LSID will be responsible for preparing applications for local, county, state and federal permits utilizing the EA as the technical basis for the applications. The Consultant may be requested by LSID to provide assistance during the permitting phase.

Deliverables: Completed applications filed with agencies.

Anticipated Completion Date: TBD

STAGE 4 IMPLEMENTATION AND CONSTRUCTION

The Consultant will be responsible for developing the three major components of construction:

- Final engineering plans and specifications for review and approval by LSID
- Implementation strategy(ies) and schedules with timetables and cost options
- Complete set of construction documents

The Consultant will be responsible for developing bid packages with construction documents for submission to prospective contractors. The permitting phase will be completed. Plans and specifications will be completed and approved and cost estimates revised. Consultant will supervise the bidding process and recommend a preferred bidder to LSID.

Deliverables: All required permits, plans and specifications necessary for commencement of construction and final selection of contractor(s).

Anticipated Completion Date: TBD

STAGE 5 CONSTRUCTION CONTRACT

The Consultant will supervise construction activities to ensure and certify work is performed according to plan and in compliance with permit conditions. The principles of monitoring, assessment and adaptive management will be applied to the process. If adjustments to plan become necessary, then LSID will inform the permitting agencies and seek revisions to permit conditions.

Deliverable: A successful construction project completed on time and on budget that functions as designed.

Anticipated Completion Date: TBD

EXPECTED OUTCOME AND BENEFITS

Environmental Restorations and Enhancements

A successful project will restore emergent marsh and lost islands on a self-sustaining basis to provide new and diverse wetland habitat for waterfowl, marsh birds and other wildlife. The benefits of a successful project are many: create new wildlife habitat and food resources; filter runoff from shoreland to protect water quality; stabilize river bottom sediment; provide fish, reptile and amphibian habitat; reduce shoreline erosion; limit aquatic invasive plant growth; provide protective area for development of submergent aquatic vegetation; and, provide improved habitat for animal species of greatest conservation need that are associated with the emergent marsh community. The re-appearance of bird species such as the American bittern and Blue-winged teal in the restored marsh will be strong testimony of the success of the project and the important ecological benefits for the Horicon Marsh flyway.

Stabilization of Existing Shoreline

A successful project will stop further erosion of river channel shoreline and river bank recession within the project area. The river bank will be protected and stabilized using methodologies that are supportive of enhancement of shoreline wildlife habitat.

River Channel Restoration for Navigation

A successful project will partially restore the left descending bank of the Rock River channel, thereby creating new channel geometry that increases the velocity of river flow to scour sediment within the channel. The restored river channel will maintain sufficient water depth on a self-sustaining basis to provide open water for navigation and recreational boating. The restored channel will provide new deep-water habitat for fish. Reuse of sediment from the river channel for environmental restorations will benefit the entire waterway by halting downstream migration of the sediment to the main body of the lake.

ASSUMPTIONS AND CONSTRAINTS

Consultant will be conversant with the information and restoration approaches given in the *Alternatives Report of the Corps*.

LSID will make available to Consultant copies of any and all of its reports, technical data, maps, etc that may be germane to the project.

Fees for professional services should cover all anticipated expenses for personnel, travel, meetings, mapping, engineering drawings, field work, sample collection, etc. There should be no “extras” for additional professional services in billings.

A separate expense line item should be shown on the fee sheet under Evaluation stage for the cost of laboratory analyses of sediment samples. Please indicate how many samples will be analyzed so a cost comparison among proposals can be fairly made.

If there are additional expense items for outside services that should be itemized, for example subcontracted surveying work, those items should be detailed with their costs shown.

LSID will enter into a professional services agreement with Consultant selected for the project using the standard form of Consultant including any revisions. The provisions of Request for Proposal.2 will be incorporated into the agreement by reference.

Payments to Consultant will be made for services rendered according to terms of the professional services agreement.

LSID and Consultant agree that complete and timely communications are critical for development of a successful project and will keep each other well informed so that work proceeds in a satisfactory manner, deadlines and budgets are achieved and unanticipated problems are addressed early on. Project update meetings will be held at least monthly.

Adjustments to schedules and specifications of this proposal may be necessary, as agreed by LSID and Consultant.

Successful completion of a large-scale project such as this depends upon attainment of a number of milestones beyond the control of LSID and Consultant, e.g. approval of an environmental assessment by the Wisconsin Department of Natural Resources, issuance of all regulatory permits and securing sufficient funding through grants and public financing. Circumstances may therefore dictate that at some point the project be put on hold, modified or terminated. In such an event Consultant agrees to provide professional services and LSID agrees to pay for those services up to the time of change in status of the project or its termination.

SELECTION CRITERIA

The successful proposal will incorporate the specifications listed in this Request for Proposal.2 and will itemize professional services fees for Stage 1 of the project. Additional specifications based on creative technical and project management considerations by Consultant that will enhance the project are encouraged and should be detailed in the professional services fees schedule. The selection of the most-cost effective proposal will be based on project scope, technical content and price.

CONTENT AND FEES FOR PROFESSIONAL SERVICES

The proposal submitted by Consultant to LSID in response to Request for Proposal.2 shall include a schedule for professional services content and fees substantially in the following form.

Professional Services Fees for Project Content

Stage 1 Evaluation, Environmental Assessment and Conceptual Design

A. Data acquisition consultant tasks 1 – 6	
Fees for Professional Services	\$ _____
Laboratory analyses of [number] sediment samples	_____
B. Evaluation of restoration options and environmental impacts	
Fees for Professional Services	_____
C. Recommendations for restoration and 35 % conceptual design in draft	
Fees for Professional Services	_____
Any additional specifications [list]	
Fees for Professional Services	_____
Other expense item [detail]	_____
Total Fees for Professional Services	\$ _____